California Regional Water Quality Control Board
North Coast Region

MONITORING AND REPORTING PROGRAM NO. R1-2005-0117

FOR

IN-SITU HEXAVALENT CHROMIUM SOIL AND GROUNDWATER TREATMENT

WILLITS ENVIRONMENTAL REMEDIATION TRUST
Former Remco Hydraulics Facility
934 South Main Street
Willits, California

Mendocino County

This Monitoring and Reporting Program is issued pursuant to California Water Code Section 13267(b) and requires monitoring of groundwater and submission of technical reports. Reports are required on a quarterly basis. The objective of monitoring conducted under this monitoring program is to provide the Discharger and the Regional Water Board with information concerning groundwater quality and contaminant trends at the site. This Monitoring and Reporting Program revises and replaces Monitoring and Reporting Program No. R1-2003-085.

Under the authority of the California Water Code Section 13267, the Discharger named above is required to comply with the following:

MONITORING

Pre-Injection Groundwater Monitoring

1. The A-zone and B-zone groundwater monitoring wells shall be sampled prior to the injection of the food grade molasses for the constituents listed in the Table 1 below.

2. The depth to groundwater shall be determined to at least 0.01 foot increments in all A-zone and B-zone groundwater monitoring wells identified below.

Post-Injection Groundwater Monitoring

3. The depth to groundwater shall be determined to at least 0.01 foot increments in all A-zone and B-zone groundwater monitoring wells identified below, monthly for three months and quarterly thereafter.

4. A-zone and B-zone groundwater monitoring wells shall be sampled monthly and quarterly in accordance with Table 1 below. The locations of A-zone and B-zone monitoring wells are depicted on Figures 3 and Figure 4 (excerpted from the Geomatrix Workplan dated October 25, 2005 and are attached to this Monitoring and Reporting Program as Attachment A and Attachment B). Monthly sampling of A-zone and B-zone groundwater monitoring wells shall commence in January of 2006, and end in March of 2006. Wells sampled quarterly will begin in June 2006.

Monthly Sampling: The A-zone groundwater monitoring wells (including contingency and performance wells) to be sampled on a monthly schedule include: Performance Wells EW-1A, GMX-2A, TW2, TW3, TW8, TW10, W7, W37A, and Contingency Wells GMX-3A, GMX-7A, W41A.

Sampling of Contingency Well GMX-7A shall continue to be sampled monthly until such time as the Arsenic concentrations achieve background levels.

Monthly Sampling: The B-zone groundwater monitoring wells include: Performance Wells EW-1B, W31B, and Contingency Well GMX-5B.

Quarterly Sampling: The A-zone groundwater monitoring wells to be sampled quarterly include: Performance Wells EW-1A, GMX-2A, TW-2, TW3, TW5, TW8, TW10, W7, W9A, W14A, W21A, W22A, W24A, W37A, and Contingency Wells TW5, GMX-2A, W7, TW3, W14A, W9A.

Quarterly Sampling: The B-zone groundwater monitoring wells to be sampled quarterly include: Performance Wells EW-1B, W4, W31B, and Contingency Wells GMX-5B and W8B.

5. All groundwater monitoring wells shall be sampled for the following constituents using the methods provided below:

TABLE 1

Constituent	EPA Analytical Method
Total Dissolved Chromium	6010B
Hexavalent Chromium	7196A
Volatile Organic Compounds	8260
1,4-Dioxane	8270-SIM
Dissolved Iron and Manganese	6010B
Dissolved Arsenic and Antimony	6020 ICP/MS
Chloride	300.1
Alkalinity	310.1
Sulfate	300.0
Dissolved Sulfides	376.1
Total Organic Carbon	415.1
Dissolved Hydrocarbon Gases (ethane, ethane, methane)*	Microseeps AM20GAX

6. Contingency Plan

The injection of molasses into the subsurface may mobilize iron, manganese, arsenic, and/or antimony. The injection of molasses may also create a temporary increase in

the concentration of VOCs in the area of the injection. If these effects remain confined to the injection area, no contingency actions will be taken. However, if any of these effects are observed downgradient of the injection area, the following contingency plan will be implemented:

If groundwater monitoring results indicate an increasing trend of VOCs or metals, a trend analysis using a Mann-Kendall Test will be conducted. If an upward trend is detected at a 90 percent confidence level, and the Maximum Contaminant Level is exceeded for the constituent with the apparent upward trend, the well in which the upward trend was detected will be resampled within three days of receipt of the laboratory report from the laboratory. The resample will be analyzed with a 48-hour turnaround time. If the results of resampling corroborate the upward trend, an upward trend will be considered verified and contingent action will be triggered.

An in-situ oxygenated zone will be created by injecting a dilute hydrogen peroxide solution approximately 5-feet upgradient and 5 feet downgradient of the contingency wells. Migration of any chemical constituent with the upward trend beyond the contingency well grid will be prevented by creating oxidizing conditions and thereby reversing the chemical reaction. The injection of dilute hydrogen peroxide shall be conducted within 14 days of a verified upward trend.

REPORTING

7. The depth to groundwater shall be determined to at least 0.01-foot increments in all A-zone and B-zone groundwater monitoring wells identified above prior to injection, monthly for three months, and quarterly thereafter.

8. The results of the post injection monitoring, monthly sampling, and quarterly sampling shall be submitted 30 days following the quarterly sampling event. The monitoring report shall summarize all monitoring data collected for the in-situ treatment, and include signed laboratory reports.

9. Twenty-four hour notification shall be provided when sampling of monitoring well(s) is planned to evaluate an upward trend in the concentrations of metals, and/or vinyl chloride.

Ordered by _____

Catherine E. Kuhlman
Executive Officer

November 23, 2005